

## Product datasheet for MC212547

### Alkbh1 (NM\_001102565) Mouse Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Alkbh1 (NM_001102565) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Alkbh1
Synonyms:	2700073G19Rik; Abh; alkB; Alkbh; hABH
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Fully Sequenced ORF:	>MC212547 representing NM_001102565 Red=Cloning site Blue=ORF Orange=Stop codon

TTTGTAAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGC**C

ATGGGGAAGATGGCGGCTGCTGTGGCTTCATTAGCCACGCTGGCTGCAGAGCCAGAGAGGATGCTTTCC  
 GGAAGCTTTCCGCTTCTACCGGCAGAGCCGGCCGGGACAGCGGACCTGGGAGCCGTCATCGACTTCTC  
 AGAGGCGCACTTGGCTCGGAGCCGAAGCCCGCGTGCCCGAGGTGGTCAGGTTTCTCTGAATGTGTCC  
 TCTGTCACTGAGCGTGATGCCGAGAGGGTGGGACTTGAACCTGTGAGCAAGTGGAGGCGCTATGGACTCG  
 AAGGCTATCCTGGATTTATTTTCATTCCAAACCCCTTCTCCCGGATGCCAGAGGCACTGGGTAAACA  
 GTGCCCTTAAGTTGACTCCAGAAACCTAATGTGTGTAACCTGGACAAGCACATGACTAAAGAAGAGACC  
 CAAGGACTGTGGGAACAGAGCAAGAGGTCTAAGGTCTAAAGAAGTGACTAAGCGAAGACCCCGAAGTT  
 TACTAGAGAGACTGCGTTGGGTCAACCTGGGCTACCATTAATACTGGGACAGTAAGAAATACTCAGCAGA  
 TCATTATACACCTTTCCCTTCTGACCTGGCTTTCTCTCAGAGCAAGTCGCCACTGCCTGTGGATTTGAG  
 GGTTTCCAAGCAGAAGCAGGGATCCTGAATTACTATCGCTAGACTCCACACTGGGAATCCACGTGGACA  
 GATCTGAGCTAGATCACTCCAAACCTTGCTGTCTTCAGCTTTGGACAGTCTGCCATCTTTCTCCTGGG  
 TGGCCTCAAGAGAGATGAAGCCCCACCGCCATGTTATGCACAGTGGTGACATCATGGTAATGTCGGGT  
 TTCAGCCGCTGTAAATCATGCGGTCCCTCGAGTCTTCCACATCCTGATGGGAGTGCCTGCCTCACT  
 GCCTGGAGACACCTCTCCAGCTGTCTCCCTAGCAACTATTGGTTGAGCCCTGTTCTGTGGAGGACTG  
 GCAGGTGTGTGCCACCTACCTGAGAAGTCTCGAGTAAATATGACTGTGCGTCAGGTACTGGCCACAGGC  
 CAGGACTTTCTTTAGAACCCGTGGAAGAGACAAAAGAGACATTGCTGCAGATGGTTTGTGCCATCTGC  
 ATGACCCGAATAGCCAGTAAACGAAAAGGTTAAATCCTAACAGCT**TAA**

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA


[View online »](#)

Restriction Sites:	Sgfl-Mlul
ACCN:	NM_001102565
Insert Size:	1170 bp
OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
Reconstitution Method:	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.</li></ol>
Note:	Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.
RefSeq:	<u>NM_001102565.1</u> , <u>NP_001096035.1</u>
RefSeq Size:	1968 bp
RefSeq ORF:	1170 bp
Locus ID:	211064
UniProt ID:	<u>P0CB42</u>
Cytogenetics:	12 D2

**Gene Summary:**

Dioxygenase that acts as on nucleic acids, such as DNA and tRNA (PubMed:27027282, PubMed:27745969). Requires molecular oxygen, alpha-ketoglutarate and iron (PubMed:27027282). A number of activities have been described for this dioxygenase, but recent results suggest that it mainly acts as on tRNAs and mediates their demethylation or oxidation depending on the context and subcellular compartment (By similarity). Mainly acts as a tRNA demethylase by removing N(1)-methyladenine from various tRNAs, with a preference for N(1)-methyladenine at position 58 (m1A58) present on a stem loop structure of tRNAs (PubMed:27745969). Acts as a regulator of translation initiation and elongation in response to glucose deprivation: regulates both translation initiation, by mediating demethylation of tRNA(Met), and translation elongation, N(1)-methyladenine-containing tRNAs being preferentially recruited to polysomes to promote translation elongation (By similarity). In mitochondrion, specifically interacts with mt-tRNA(Met) and mediates oxidation of mt-tRNA(Met) methylated at cytosine(34) to form 5-formylcytosine (f(5)c) at this position (By similarity). mt-tRNA(Met) containing the f(5)c modification at the wobble position enables recognition of the AUA codon in addition to the AUG codon, expanding codon recognition in mitochondrial translation (By similarity). Specifically demethylates DNA methylated on the 6th position of adenine (N(6)-methyladenosine) DNA (PubMed:27027282). N(6)-methyladenosine (m6A) DNA is present at some L1 elements in embryonic stem cells and probably promotes their silencing (PubMed:27027282). Also able to repair alkylated single-stranded DNA and RNA containing 3-methylcytosine by oxidative demethylation, but with low activity (By similarity). Also has DNA lyase activity and introduces double-stranded breaks at abasic sites: cleaves both single-stranded DNA and double-stranded DNA at abasic sites, with the greatest activity towards double-stranded DNA with two abasic sites (By similarity). DNA lyase activity does not require alpha-ketoglutarate and iron and leads to the formation of an irreversible covalent protein-DNA adduct with the 5' DNA product (By similarity). DNA lyase activity is not required during base excision repair and class switch recombination of the immunoglobulin heavy chain during B lymphocyte activation (PubMed:23825659). May play a role in placental trophoblast lineage differentiation (PubMed:18163532).[UniProtKB/Swiss-Prot Function]